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LANCASTER-SCHOOLS.

The Annual Report of the British and Foreign School Society, or Royal Lancastrian Institution of England, for 1815, has lately come to our hands. It is an interesting Document, and we regret that our limits do not permit a republication of it. It presents a kind of historical view of this System of Instruction, and a mass of information that would no doubt, be highly acceptable to our Readers. Great efforts have been made, in Great-Britain, to extend the benefits of this system throughout all quarters of the globe. In France, Flanders, Holland, Germany and Russia, besides many other countries, the plan is already in operation:—and to this enumeration we may add that, in the East Indies, and at least in one place in Africa, there are now Schools on this plan. In the United States of America, there are many in operation, and others founded, or about to commence their operations in various and remote parts. In a few years, it may be confidently believed they will be established in all our populous Towns, from one extremity to the other of this Union. In Europe, many of the most distinguished men of the age, are devoting great attention to this method of instruction, and to the founding of Schools of this plan, as well by their writings and publications, as by the whole influence of their example. The name of Carnot, of France, presents to our recollections in America, the recent troubles of Europe—and we hardly know if this Statesman should be admired or execrated. Whatever may be the diversity of opinion, as respects political events, and the agency of this man in producing them, it is yet certain that he inherits, from nature, a sovereignty and dignity of mind that ennobles the human character. In 1815, after Bonaparte returned from Elba, Carnot, then Minister of the Interior, made a learned and elaborate Report, on the subject of Education, highly in praise of the Lancastrian System. He proposed that a National School, on this plan, should be established at Paris, to serve as a model for France, and for the instruction of Teachers, who should, in time, extend the system to all parts of that Empire. This proposition was adopted by Bonaparte, and a Decree issued accordingly. Far from us be the intention to interfere in the concerns of other nations, or to become an advocate for the one or the other of the late Sovereigns of that ill-fated Empire. We wish, however, that France could long enjoy the benefits of such a system as was decreed to her; for according to the above Report there are millions of children in France totally destitute of education, and of the means of procuring it. In the preamble to this Report, we notice the following well-merited compliment to America, for the care bestowed on the subject of education. "When the Americans of the United States," says he, "determine the situation of a city, or even of a hamlet, their first care is, along with the instruments of agriculture, to send a teacher immediately to the spot. These men of sense—these pupils of Franklin and Washington, being very sensible that to cultivate the mind, is as closely connected with the real necessities of man, as to clear the land, to roof houses, or to obtain clothing."—Carnot.

Founded in 1815.

The Albany Lancaster-School,
With a View of the School-House, *now erecting, drawn by* Mr. Philip Hooker, *Architect.*

The Albany Lancaster-School, has been in operation about five years. It has been taught, hitherto, in a room of 40 feet by 28, yet so fitted up, as to receive 200 scholars;—and it has never had less than that number. Since its commencement, 1100 have enjoyed the benefits of the Institution. Here have been taught *Spelling*, *Reading*, *Writing*, *Ciphering*, *Geography*, *English Grammar*, *Composition* and *Elocution*, in the style of the best Academies of Europe. When the Teacher, Mr. W. A. Tweed Dale, arrived in this country, he was introduced to the Hon. De Witt Clinton, who, having become acquainted with his character and abilities, wrote to Gen. S. Van Rensselaer: in consequence of which he was invited to Albany by the Corporation of this city, and engaged by them for six months. This led to the formation and incorporation of the Lancaster-School-Society; with a permanent appropriation of that proportion of the Common School-fund, which belongs to the City of Albany. The Corporation of the City also, appropriated $ 500 annually, beside a donation of 800 to defray the expense of fitting up the School-Room, &c.; resolving at the same time, to build a suitable School-House. And when we consider the large numbers that have been taught on this plan, at a comparatively small expense, and also the tendency of the system to form virtuous citizens, by training up the youth in habits of order and method; by habituating them to the discharge of relative and social duties; and in short, by introducing them into the World in miniature, and instructing them in the business of real life; who can attempt to calculate the importance of this Institution to our City. We have been peculiarly fortunate in procuring a Teacher, from the original School of Mr. Lancaster, in England. To his information, obtained in Mr. Lancaster's School, he has added important improvements, both of his own, and the invention of others. These are too numeous to be mentioned in this place. Those of the interior structure of the school-room, may be easily appreciated, and are well deserving of the attention of building committees. The elevation of the desks, places every scholar in the most distinct and conspicuous point of view for the Teacher; while his Desk, placed so as to present nearly an equal space in front, and on each hand, affords the greatest facility in his communication with the whole school. The entrance for the boys, being at one end of the building, and that for the girls, at the opposite end, two schools, entirely distinct and separate may be taught in the same room. The apartments under the desks, will be of the greatest utility for this purpose, both before and between the hours of instruction. In these, those who come from a distance, may remain and recreate themselves, without injuring the furniture of the School-room; and neither sex will be seen or heard by the other. During School hours, these rooms may be used for recitation, and a portion of each as a ward-robe.

We shall only mention one improvement in the mode of teaching: this is Silent Dictation. Instead of having the words spelled aloud to each class, to be written on slate; they are pointed out by a Monitor, on a printed alphabet, in *written* letters. This is done without interrupting any classes that may have been called out to read, or cipher aloud, and without being interrupted by them. These may profitably join in concert, however, when the words that have been written on slate are spelled aloud. Thus all the school may spell the same word, at the same time: This is done after the word has been pronounced, syllabically, without repeating the syllables, but merely by calling the letters distinctly, and pausing a little between the syllables;—a method at once pleasing and instructive. Mr. Dale, the Teacher of this School, is probably as well qualified for his Task as any other, in any similar school in America; and though his modesty may take the alarm, we deem it an act of justice thus to declare his merits. An examination of his school, has always afforded us high gratification and ample assurance for these remarks, which we have made without his knowledge, and solely for the benefit of those who may be interested in gaining correct and useful information concerning the details of the Lancastrian System of Education.

The Lancaster School House, now erecting in the city of Albany, is situated on the west side of Eagle Street, a little south of the Capitol. It is a neat, plain brick Edifice, 100 feet in length, and fifty feet in width, with a small wing at each end for stair cases.

The first floor will contain a vestibule, hall, and stair case, and a room for the Trustees; in the centre and on one side, a room of 47 by 35 feet, for public meetings—and on the other, convenient apartments for the Teacher's residence.

The second floor is the school room, 97 feet in length, 47 feet in width, and 21 feet in height. It includes the two upper tier of windows. The Teacher's desk is placed in the centre, against the front wall, and elevated about 2 feet from the floor. The desks and seats for the scholars are ranged on each side, parallel with the end walls;—each rising one foot above the other, as in a church gallery: each stage 3 1-2 feet, gives room for a desk, seat, and narrow aisle between the seat and the next desk.

Opposite the Teacher's desk, against the rear wall, a stage is elevated on pillars, with steps to ascend to the same, which is also fitted up with desks and seats, for such scholars as the Teacher shall think proper to honor with a seat there, as a reward for their assiduity, and to excite emulation. There are rooms of 47 by 17 feet, at each end, under the aforesaid gallery, besides four lumber rooms under the front part of the gallery.

The annexed plate is a Geometrical Elevation of the front, drawn to a scale of 20 feet to an inch. In this representation the front wall, to the right, from the water-table to the cornice, is supposed to be removed, in order to exhibit a view of the interior structure, with the elevation of the desks, seats, &c. in the School Room.

More minute details, desirable in this case, are precluded by

want of room; and we close by recommending the plan, and entire construction of this building, so honorable to the zeal, intelligence, and enterprize of the Inhabitants, and the Corporation of this City, to the attention of building committees and the trustees of Lancaster-Schools. For the benefit of the public, we could wish that Mr. Dale were more extensively known, among the friends of the Lancastrian System in America. Of his qualifications and abilities as a Teacher, we have ample evidence, in the success of his efforts in this city. He was frequently selected by Lancaster himself, to superintend the first organization of Schools on this plan, in various parts of Great-Britain;—and though we should esteem him the less, we could almost wish he had more of that personal vanity which enables men of inferior qualifications to attract the more notice, or less of that modesty and amiableness that prompts others to retire from it. In making these remarks, designed for the information of those more immediately interested in subjects of this kind,—and at a time when they necessarily engage a large share of general inquiry and attention, we are actuated alike by sentiments of personal esteem, and a due regard to the interest of the public.

ED.

To the Editor of the American Magazine.

Agricola, on Domestic Policy, and the means for improving the Resources of the United States.

AT a time when the interests of American Commerce and Manufactures are laboring under great difficulties, and the public attention is just beginning to look seriously around for remedies;—when, more than ever before, since your remembrance, every circumstance conspires to heighten the importance of Inquiries, in relation to the prospective policy of America, I am about to offer you a few suggestions. Not that I fancy myself adequate to a due consideration of the subjects that naturally present themselves to my view—for I really lay no claim to pretensions such as should characterize the Statesman, or the Legislator. The times earnestly call for the aid of all men who love their country, and who would seek its prosperity. It is a time of great individual perplexity and embarrassment:—of very general consternation. Not that the Republic is threatened with dangers from abroad: The storms of war have passed over us, and the world reposes in peace. There is pestilence in war:—the whole globe attests this fact. An atmosphere, if I may so say, generated by a state of war, composed of its elements, carries, more or less, this pestilence into remote periods. But lately, and the world was in arms:—at peace now, we are yet inhaling the poison of causes as universal as are the effects that follow: with this difference, that we *feel* the effects, and only saw, more or less remotely, or heard of, the causes. A moral contagion hath swept this globe: can we expect to escape is consequences?

The people of all countries had embraced the habits and pursuits of a state of general warfare:—happily, in the dispensations of Divine Providence, we are called upon to exchange them for those of peace. Great changes are never brought about but by more or less of individual, and even national suffering: There is even a storm of rest and peace, as well as of commotion and war. The elements of society, have not been less affected than have the physical elements. If we have been too ready to embrace the elements of war; to seek its honors, or its *sinews*;—too eager to profit by the miseries of our fellow-creatures, whether in distant countries or our own, for Heaven's sake let us, in all due humility, receive that chastening which a righteous Providence inflicts upon us. I certainly know not what may be the designs of Omnipotence, nor is it my purpose to offer any speculations on the probabilities of the duration of the present circumstances of the world in relation to peace. My object is to consider the state of our domestic relations, as actually existing at this time, and to offer some suggestions that seem to me worthy of public regard. It appears to me, however, that at no former period has there been such a general disposition, throughout Christendom, for prolonging the duration of a state of peace. Not only has war stamped its horrors on the minds of the people of all nations, but it has every where done this so recently that the remembrance is yet fresh and imposing. It is not to be supposed that, in the general pacification, the Sovereigns are all satisfied with the terms on which it was brought about;—for Sovereigns make wars in order to gain advantages of others—mere tricks of state, toward getting good bargains:—but the people, generally, must desire peace, while among them, as among the Sovereigns and Rulers, there may be exceptions, and from the same motives. We all affect to deprecate a state of war;—and yet how eagerly do we avail ourselves of the opportunity to acquire riches at the expense of others: not only an expense of treasure, but of blood—of money, but of life itself! So general is this, that, unmindful of the miseries of war, we covet the gains of it, and murmur at being deprived of the opportunity. The whole Christian world—Christian! nay—but that which we call such, because professing Christianity, has been, for many years, busily employed, either in studying the means for destroying life, or in furnishing them to those whose trade it was to do so! The habits of a state of war, have fixed themselves firmly upon us: so firmly, indeed, that we are obstinately bent on maintaining them, even when, by the arm of the Almighty, the world reposes in peace. War prices, and its opportunities, are coveted by too many. And in saying this, I mean even all that I say. If I avoid adding more, and entering into details, it is only because I invite reflection, and would not prevent it by arousing the passions. My eye is on society, and not on individuals. Let others make their comments: I present only a text. We affect to deprecate a state of war;—but eagerly seek to profit by it, some in one way, and some in another. We grieve at the miseries of war, in theory, but laugh at them in practice. We forge its implements, and gladly avail ourselves of high prices:—

Nay—I must stop. Who is he that I shall not offend, if I go on thus, with society in my eye, and my eye and my mind so full! The Wisdom of Jehovah hath called upon us to beat our swords into plough-shares, and our spears into pruning-hooks. Let us obey the summons, and cultivate the arts of peace, though the change be painful to our lusts, and the era be marked with partial ills. Though there be a storm of peace, it only follows in the train of a storm of war.

We have been the mere laborers and carriers of contending armies, until our manners partake too much of those of our employers: the nations have laid down their arms: it is time to turn all our attention upon ourselves, and cultivate the arts of peace. Not only is the naval, but the commercial marine, of the whole civilized world, by far too great for the present state of things. The commerce of the world, during peace, can never employ but a small part of the shipping which wars have produced and employed. The stagnation which commerce feels, will continue to be felt until foreign wars shall call again for supplies and foreign commerce: and a stagnation, which first affects this branch of a nation's wealth and industry, will sooner or later extend its influence over all. Far be from me the thought that I can fathom the designs of the Almighty Sovereign of the Universe. I know not what may come, by Divine appointment. But, reasoning as well as I can reason on natural events, and I venture to predict that ages shall pass away before the foreign commerce of these states will again attain its late importance. Why it is so, is not my present purpose; but the commerce of the United States will be long in presenting that proud aggregate which lately excited the jealousies of foreign states, and flattered the pride of Americans. Nor let it be imagined that, in making these remarks, I underrate the glory of our naval, or the intelligence, the skill, or the industry and enterprize of our commercial marine. All American as I am, it is impossible for me to do this. The world resounds with our praises, in these respects: but I am bound to remember there is no friendship in trade, a trite but true maxim.

What then is to be done? I answer, much—and the day is pregnant with events. The friends of America, were never called upon to do more, even when they resolved to assert the rights of nature, and claim a rank among the nations. Would we commence our labors, let us first learn to allay the spirit of party, and merge all its minor distinctions in the appellation AMERICAN. Let us learn, too, to discriminate between the qualifications of a mere party politician, and a statesman. A man may learn the art, and practise it ever so successfully, in managing a party, who has not one grain of the necessary qualifications for managing the concerns of a state. We seem only desirous of the political interests of party, and absolutely to forget that party interests are not, exclusively, the interests of the nation. We are all politicians, and all statesmen, *deeply versed in the arts of government*;—that is, the government, or rather *management*, of party; but while we have so many party-politicians, to whom we confide all the posts of honor, it may be questioned if there be not a scarcity of national-politicians, and

real statesmen. The people, must, sooner or later, learn to discriminate better, and not confide every thing to the mere acquirements and qualifications of political cunning.

The policy of party, that seizes the reins, continuing to hold them, soon gains the whip and spur; and we are a Nation governed rather by the views and motives of party, than national-policy. In saying this I know what I say, and I do not say it without due reflection. Not only do I believe it true, but I also am fully persuaded it is high time to speak boldly. I am no party-man; neither do I want the favor of party: nor do I hold any office, or wish, or expect any, in any event. I am an American;—and boldly challenge all those who are such, and who are not, so show an act of my life or a sentiment of my heart, which is not in unision with the character I assume.

I may here be told, as I have been before;—'the man talks well—but his plan is impracticable. No man can get along, in this country, without attaching himself to some party. Whatever his talents, acquirements, or worth, without doing this he will only remain a mere cypher.' Such are the persuasives of even some of the most influential men in the state;—and who have become such, only by having first gained a *character* in the ranks of party! What kind of character, let partisans enquire.

But I have not time to dwell on the innumerable topics that present themselves for examination. The Legislator may find enough to do. Our money institutions, if not modelled after the very worst plan that can be devised, are at least so modelled as to demand his care. And in looking around for other subjects that call for consideration, he will find none of greater importance, in a national point of view, calling for Legislative attention, than that I have just named. Its evils, like the plagues of Egypt, are extending their ravages every where: from the city to the hamlet, from the vallies to the plains. Much, very much remains to be done toward improving our Roads, opening new ones, and extending the facilities of general intercourse, as well by these means as by cutting Canals, and improving the navigation of our rivers. Our internal Commerce, demands more attention—that which is external, in a country maritime and every where open to the ocean, needs little other encouragement than to see that our agriculture shall furnish supplies for it. We have by far too much foreign trade, for our domestic—too much commerce, for the surplus yielded by our agriculture.

What, then, are the prominent features of that prospective policy which you would propose for the interest of America? I answer—individual independence, and freedom from debt. This is desirable every where, and the people are every where beginning to feel that it is so. To enable the people to enjoy these blessings, is the only way to promote our national prosperity. The interests of Agriculture, demand early and unceasing attention. The Legislator should devise the means for increasing the amount of the products of agriculture, before he seek to divert any portion of our strength into other channels. The strength of a nation, circumstanced as are the United States, depends upon the disposable resources,

which its surplus, from the products of agriculture, may yield. When this surplus is small in amount, we are, as a nation, comparatively poor; and rich, when it is great. A little reflection may assure us of this. Our strength, then, lies in labor, and that principally, in the labor bestowed on agriculture: but in saying this I mean to include also that portion of labor which is more immediately required for auxiliary aids, in agriculture, with the whole of the varied labors of those devoted to farming. These labors embrace such works of the mechanic arts as derive their support immediately from the farmers, with all the various manufactures and works of household economy. Farmers, blacksmiths, nail makers, tanners and curriers, carpenters, weavers, shoe makers; iron founders, including furnaces, and forges or bloomeries, mills for grinding and sawing, carding-machines, paper-mills, and a vast variety of domestic trades and tradesmen, are all included in this view, because all are necessary to the support of agriculture, and that they form integral parts of an agricultural community. To this enumeration of trades and tradesmen, many others might be now added, were my object historical accuracy instead of a general view: and the wants of society are constantly calling for additions. What they are, that are so demanded, will readily be discovered by individual intelligence and enterprize; and the Legislator may wait for indications from these sources, without any prejudice to our national interests. Whatever is essential to the interests of those employed in agriculture, may be assumed as of the same degree of importance to the interests of the state at large. I may be laboring under a mistake in these views; but it clearly seems to me that our first care should be to increase the surplus of our agricultural productions, and to feed and stimulate the love of gain among those who constitute the farming interest in America. In a country like ours, where land is comparatively cheap, and the taxes on it are low, the first source of wealth is the soil. It is not the poverty of farmers that will drive them to manufacturing, so long as land may be rented at 15 to 20, and even 30 years' purchase, or bought at fewer dollars per acre than the British farmer pays for annual rents. Great manufacturing establishments, must derive their support, in this country, from agricultural, rather than commercial opulence. But, left to themselves, the farmers will nourish manufactures, and increase them, in variety and amount, quite as fast as their accumulation of capital will allow them to detach some portion for this purpose. It is in vain to talk about patriotism, in this, or any other money-making business: as are all attempts to force it, so long as money cannot be made by it. This, is, however, an age of hobby-riding;—and cunning men—the sharpers and speculators, want corporate funds to manage, for no other reason but because they can enrich themselves more readily in this way, than by the drudgery of individual and unaided industry. I could dwell much longer on this topic, and make it, with our late experience, even a record of facts, in support of my theory—but I forbear. It is not, merely, to call public attention to what I here present, that I have taken the pen; but to call,— and entreat that

the people would take time to reflect on the subjects that present themselves for consideration. If I have not dwelt more upon them, it is only owing to a want of leisure and ability. More, however, would have been said concerning the policy of encouraging such kinds of manufactures, as must be carried on in large establishments, if that subject had not been previously discussed, in a separate Paper, for your Magazine.

The prosperity of a state, circumstanced as is that of America, may be truly said to be founded on its agricultural, commercial, and manufacturing resources, and the general prosperity of all these interests. We are, essentially, an agricultural people. If to this we add, commercial, and manufacturing, these interests are secondary, derived from, and supported by, the surplus which the products of agriculture yield, after maintaining the population that it employs. Should the earth withhold its bounty, or the seasons frown upon us, so that we have none of this surplus, our commerce must fail. All the other arts, are supported by this surplus. If agriculture yield none, what becomes of trade? If it yield much, there is much to trade upon—if little, less. Would the real statesman point out the sources of individual and national opulence and wealth, he must devise the means for increasing the aggregate amount of this surplus. A small state, the inhabitants of a little island, of even a populous city, may live, and grow rich, on the profits of a carrying or foreign trade, even without any surplus of the profits of agriculture. But can a nation of farmers—such a community as I have described, and which every man knows to be a picture of society in these states; can such a society do this? Our first business lies in giving such effect to the operations of husbandry, as to produce the greatest possible quantity of this surplus. How to effect this, is the business of legislators and statesmen, aided, as they are sure to be, by the co-operation of the farmers, the domestic mechanics supported by them, and by the exertions of all those who seek an honorable independence through the fruits of their labors;—this is the general interest—the interest of a whole community, embracing as many degrees of latitude and longitude as some of the *manufacturing states of the old world do of square miles!* To think of transplanting their habits, and of nurturing here the prejudices that have grown out of them, is rank madness. If we were more careful to import from these foreign states, their knowledge of farming and gardening, of domestic stock, and the arts connected with husbandry in general, it would be well for us. There is no branch of this business so much neglected in America, as that in relation to stock, or such animals as the farm should be stocked with.

This subject demands the care of the American Legislator. By what means he could best direct public attention to it, I know not: but I am sure he would be a public benefactor who should produce this desired effect. In Europe, it is generally admitted that much good has been done, in this respect, by the institution of Public Fairs, as well for the purchase and sale of domestic animals, as for every other description of property. Whether the same means is calculated to succeed well here, I know not; but I am inclined

to believe that, at least, the experiment is worth a trial. The object is, agricultural competition; and fairs may very probably produce this, as readily and effectually as any other means that can be devised. Agricultural Societies, have done much good in the states of Europe; and we have witnessed something of their beneficial effects in America; as much, at least, as could have been expected, considering the paucity of their numbers, and the short periods of time and the limited means, within which their operations have been circumscribed. The experiments of Public Fairs, too, so far as it has yet been tried, in America, has fully answered the expectations of its friends. To give a suitable impulse to these efforts, the aid of the Legislature seems necessary; and I can but hope that aid will be promptly afforded. The granting of premiums, seems to be a very essential part of a system of this kind; and for these, public funds may well be appropriated. Without such aid there would be very little chance of final success. And as, in all experiments of this sort, much depends upon the success of a first effort, I would beg leave to suggest that, should it be attempted, great care will be necessary not only in adapting the means, but the manner and magnitude of it, at first, so as to ensure final success. Contemplating the probability that the Legislature of the state of New-York may act on a plan of this kind, I take the liberty to propose, that, should it do so, its operations may be confined, at first, to some few Counties, where the plan may have the most advocates, and the facilities for its execution are known to be commanding. When its operations are seen here, people have grown familiar with them, and are convinced of their beneficial effects, the system may be readily extended to embrace every county. A proposition for Public Fairs, lately originated with the Society for the Promotion of Useful Arts. I have objected to the details of the plan, but not to the principle, which I wished much to see not only fairly investigated, but put to actual experiment, and conducted to final and complete success. With the precautions that I have just suggested, I have intimated all that I had then, or have now, to object, except that, in the form contemplated by the Society of Arts, I felt fully persuaded the Legislature would not be disposed to act upon it, and thus we should fail at the first step of a first effort.

A great deal has been said about Agricultural Societies, and many people seem to indulge great expectations from them. In a country where the pursuits of agriculture have engrossed the attention of men of wealth, of leisure; and particularly of men of Science, much may be done in this way. I am of the opinion, however, that, in order to derive from these institutions the important advantages that we expect, there must be far more of practical acquaintance with these subjects among men of science and wealth. Until it shall have happened that Farming and Gardening have become more fashionable among men of this description, we will find few of them capable of giving any very important aid to the practical agriculturalist. There are some districts of this State, where without any, or but very little aid from men of science, the art of farming is carried to very high perfection: where are the places to be found,

enriched in the same way, by the labors of Science? Around Philadelphia, the men of science, of leisure, and opulence, have devoted much of their attention to agriculture. They have united their industry and skill with that of the ordinary Farmer—and the consequences are distinctly seen, by even the most casual observer. Where are our Gentlemen-Farmers, in the district around the Capitol of this State? I know there are some, and I wish there were a great many more: for we have many men of great wealth, retired from business or living without it; and before much can be expected from Agricultural Societies, we must have such, and contrive to unite their efforts with those of the ordinary Farmer. These remarks, however, are not made to dissuade from any attempts that may promise beneficial results; but only to intimate our present wants, and that remedy which circumstances so clearly demand. I may have less confidence in the ability of any association of men, who do not unite the knowledge of science and practical agriculture, to superintend and direct its efforts and interests, than most others;—but could we unite men of this description with the most intelligent of those who are, by habit, actual and good Farmers, I should expect as much from their joint labors as would any other man. There is, probably, less of what may be called theory, in the art of Farming, even as practised by the best of Farmers, than in almost any other art, trade or employment, to which so many devote their time. In the County of Duchess, in this State, we may see a better specimen of good Farming than in any other County around us: if habit perpetuate, here, the most approved methods, so much the better: and it is habit, almost exclusively, that directs the agriculture of that County. Would we acquire a knowledge of its modes, and extend this knowledge for the benefit of other, and every part of the country, the agents that we employ must be, principally, actual Farmers. Were there an Agricultural Society for the State, and branches in every County, and these Societies composed of men such as I have mentioned, it would be easy to extend a knowledge of the improvements of one district, into others, and even all. Committees from all these Societies, comprising scientific agriculturalists, and the most intelligent and observing men among the best actual Farmers, by visiting every part, and presenting an annual Report to the State Society, or the several County Societies, might be the means of collecting and diffusing all that is known among us that is valuable to the Husbandman. The actual Farmer, takes no lessons from the mere theorist in agriculture, however richly imbued with the knowledge of science; but let the man of science reduce his knowledge to practise, and become, himself, a successful agriculturalist, and the Farmer will greedily adopt all his improvements. In this way, science may administer to the wants of agriculture, and agriculture to those of Science: And whatever of improvements that may be thus introduced, will be perpetuated by men whose habits constitute their knowledge and the source of their gains. With the mass of Farmers, farming, whether good or bad, will forever remain an Art, rather than a Science. For the justness of this remark, and the consideration that it claims

from those who would instruct the Farmer in the art of farming, without being himself a Farmer, I appeal to those who have had the best opportunities for observation. If, therefore, from Agricultural Societies, the institution of Public Fairs, the granting of Premiums, the publication of the Transactions of Agricultural Societies, or any such kind of plan or system of measures, we would carry the spirit of improvement into general operation among the Farmers, it must be done, principally, by the influence of example, and the agency of practical Agriculturalists.

AGRICOLA.

Albany, March, 1816.

To the Editor of the American Magazine.

SIR,

IF it ever has happened to you to be in a mixed company, among people rather polite, where some person, who, meaning to be civil, has not yet properly understood the distinction between mere civility and politeness;—if you have heard them converse, and seen how much there is in *manner*, you have then seen the disadvantage, and can judge of the predicament in which I shall appear in the following pages. I really am not prepared for the labor of writing an Essay—and yet I have taken the pen with an intention to write a long Paper for your miscellany!

During these long winter evenings, my intention is to indulge the freedom of my thoughts, and to write whatever they may suggest to me. An old Farmer, at my time of life, has a great deal to occupy his attention;—and yet he has, especially at this season of the year, a good deal of time for the indulgence of thought, though he may have no adequate inducement for submitting to the labor of thinking—and, still less, to that of writing. If I write for my own amusement, you can do just as you please about presenting what I shall write to your company.

THOUGHTS, ON PHILOSOPHICAL SCIENCE, ON CREATION, AND THE ORDER AND CONSTITUTION OF NATURE.

In medias res. Hor.

I have been thinking that what is called Philosophical Science, abounds with great mistakes, if, indeed, I yet remember correctly what I learnt about it at School. The Earth is a globe, which revolves daily on its axis, as it travels onward in its annual course around the Sun. Its periodic revolutions are probably determined with accuracy;—but whether its precise figure is yet well understood, may admit of some doubts. Instead of an oblate spheroid, I rather incline to think it ovate, or egg-shaped, with the largest end N. of the equator. My reasons for this opinion will be indicated in another place.

I have long suspected that 'Philosophy,' does not philosophize well, in supposing that the matter which composes this globe, is more dense or compact at the Earth's centre, than near the surface. The effect of its motions, has not been duly considered, unless my thoughts deceive me. I suppose that the greatest specific gravity of this matter, lies near the surface—or, in other words, that the most dense of all the matter that composes this globe, is now arranged so

near the surface as to compose a sort of crust, or shell, which surrounds the Earth, or nearly so: That this shell has been formed from the watery mass, giving its heaviest substances first, and lighter in succession, which are thus stratified, by successive depositions, accumulating underneath: and that it now occupies, every where, a position more or less remote from the Earth's centre, in proportion as its specific gravity is greater or less;—the heaviest portion being the most remote, or the highest on the surface.

I take it for granted, that this Earth, like every thing else has had its beginning of existence—and that, at first, it was but a soft mass of matter. Every body, I think, will acknowledge that this is highly probable, because that, evey where, we yet find so many circumstances to indicate this state of things.

Suppose, then, that this globe were once a fluid mass—just such an heterogeneous mass of matter as a mixture of all its earthy and fluid particles would form, when it was 'without form, and void,' and when 'darkness was on the face of the deep.' Let us suppose it just created, composed of the elements of all things that now constitute a habitable globe, existing yet but in elemental embryo, and just thrown off in its eternal circuit around the Sun, while it is rapidly turning on its own axis.

I pause, here, to meditate. The wisdom of the Deity need but to form the elements of things, and His great Works proceed in their order. Few, indeed, are the real elements of all that is 'in the earth, in the air, and in the sea.' But, of all this mass of matter, however composed at the first, the waters form by far the largest portion; and of course the whole would constitute a kind of muddy mixture, if I may so express myself—a heterogeneous semi-fluid, pervading the whole globe. The elements of water—of atmospheric air;—of all that infinite variety of existence which now fills the Earth every where; of all those various productions that administer alike to the wants of man and the inferior beings that animate all nature;—of all these, the constituent elements were but very few. But then we must remember that the grand Architect, the Creator and Founder of all, was GOD, in whom is centered Omnipotence. I hardly dare declare how very few in number I consider these really elementary substances. Neither air, nor water, are such; nor, in my opinion, are any of the gaseous, or aeriform fluids, except, indeed, caloric, which I suspect to have been the only elementary or original fluid. But let us consider this globe, as it may be supposed to have existed, after the composition of its watery matter, or what may be conceived the Creation. Let us consider this mass of matter collected, united by the affinities of its parts, or by their mutual attraction, and just thrown, by the creative power of Deity, into that circuit of motions in which it is forever designed to move. Turning rapidly on its axis, all the substances of which it is composed would feel an influence of centrifugal action or force, exactly in proportion to their several specific gravities, and their relative distances from the centre of its motions. The heaviest, then, feeling this most, would first be driven from the centre toward the surface, instead of being drawn toward the centre; and this would continue

until the heavier substances were all arranged there, and the lighter collected in the centre. This will appear evident when we consider the great magnitude of the Earth, and the rapidity of its motions.

Whether this globe has always revolved on its axis in the same period of time that it now does, may admit of some doubt, if we permit ourselves to reason upon it according to the principles that I have assumed. I rather suppose its revolutions were performed in much less time before, than ever since the flood: but on this subject I intend to say more by-and-by. Most natural substances are capable of undergoing great changes; and even of existing under circumstances so widely variant as to seem new substances. Probably no metallic, or perhaps mineral substance, undergoes so many changes, or performs, in the economy of nature, functions so important, as Iron. In its gaseous state as we shall see by-and-by, it assumes the characters of a new fluid, and exhibits when combined with caloric, the phenomena of electricity, becoming the prolific agent from which the lightning, and thunder, and the rainbow, are produced. Caloric, and oxygene, combined in effect, convert iron to gas, as I have shown in another place;—and a long time must have elapsed, after the Creation, before there was any considerable quantity of metallic gases in the atmosphere. But let us proceed in our view of the Creation, and the order of natural causes and effects.

Turning again to the contemplation of a vast globe, such as I have supposed this once to have been, soft and unformed, plastic from the hand of Deity, let us meditate on the effect of its motions. Revolving on its axis, with a rapidity of motion of which we can but faintly conceive, the heaviest substances, of the grosser kind, are precipited from this watery mass, and thrown toward the surface by the natural operation of centrifugal forces:—and by the law of affinities, being mutually attracted, these particles are here aggregated into separate masses, and finally into one. This mass, composed of the heaviest substances, recedes further from the centre than such as are lighter, and of course protrudes beyond the general outline of surface. Here, then, is a hillock, a hill, a mountain—constantly extending its base, and growing larger and higher for a great many ages. A primitive mountain, in the language of modern geologists, because one of the first formed, and its stratification is uniform, regular and undisturbed. Why should it not be? The more ponderous of the earthy substances that form this mass of matter, being thus raised up to day, feel the influence of alternate heat and cold, dryness and moisture, till at last the whole is converted into earth and stone. In time it becomes a mountain of granite, its summits towering in the clouds, or serving as a landmark for the smaller masses that float on the great deep, seeking the fellowships of affinity. Attracting, and attracted, 'your guide is sure';—and thus these masses are arranging themselves around the foot of the parent-mount, to form, in time, secondary mountains. Making their obeisance, as they come into contact, their stratification is disturbed—the strata broken and disjointed, and variously dipped or inclined to the horizon. By the impetus of

the force of contact, how many broken-hillocks have been miserably crushed to shapeless forms, or driven from their *ancient* homes! But nature, true to itself, as if abhorring the wrong, hath stamped the image of violence on the features of the country thus seized by force. Let the philosophical geologist carry this remark with him when he surveys the arrangement, the stratification of the general features of hilly and mountainous regions, and he may gain instruction from their shapeless forms. These hills are also converted to stone; and by their joint influence, the mountain of granite rises higher and higher, while its strata preserve their regularity, although the globe is only encrusted with earth, and that but partially. The poles of the globe being fixed at the N. and S., these lands, rising into mountains, grow to Continents, and necessarily extend themselves in a direction not widely differing from that of the polar axis.

Here, then, is one Continent formed, elevated above the general surface, only because land is heavier than water, and while yet we may suppose that surface occupied by the great deep, sustaining here and there a floating Island of land. Now suppose, reader, we here pause awhile. For if I reason well, the effect of this Continent, will be, to occasion an inequality in the rotary motion of this great globe! and this inequality must produce another Continent, on the opposite side! It is so, surely. Well—here then, are two great Continents, but the one must have been formed before the other, though by the same process. The Old, and the New! Now, it is not worth while to stop and speculate on the thought of the moment—whether the Eastern or the Western Continent be the oldest—let us look at their mountains. I suppose the one first formed, will not have the highest mountains, nor will they be so continuous in their chains, so uniform in duration, or in altitude. Nor are its secondary hills so high, or so rich in the finer metals—although more ponderous; for, from the very fineness of their particles they would not be precipitated so soon. For this reason, few of these can exist in primitive mountains, or those of the earliest formation, except at far greater depths. All the varieties of stones, have been formed from earth, by the operation of heat and cold, dryness and moisture. There could have been no stones, until long after 'the dry land appeared.' The limestones, and slates, in all their varieties, have been formed from clay, or alumine; and of course no calcerous or shistic stones were formed until long after the silicious masses of granitic mountains, unquestionably the primeval order of stones.

Has every part of this globe, then, been washed by water—or rather, has the land, every where, been formed in water, from which it has finally emerged? I suppose so—and that the reflections on this subject which have fully convinced me of this fact, would, on examination, afford conclusive evidence to others.—If so, then, what becomes of the popular philosophy of the age, which supposes a state of things exactly the reverse of this theory? and that the centre of this globe is so pressed by the superincumbent mass, as to be some thousand times more dense than the matter at its surface!

But—in this kind of speculation, where is the influence of cen-

tripetal action, or force, all this time? Let us move slowly, and we shall see. Centripetal action, I think, is the opposite of centrifugal. Suppose, now, that the wisdom of the Deity were employed in forming a Globe, like this Earth, and in giving it a velocity of motion on its axis exactly proportioned to its quantity of matter, and of course to its bulk or capacity. Would it not, on the true principles of natural philosophy, which science has assumed, be possible, for the infinite mind of Deity, so to proportion these, that, exactly at the surface, the influence of one of these forces should form a perfect counterpoise for the other? May there not be, in the motion, and quantity of matter, of this planet, some point assumed, where these forces produce this perfect counterpoise? I suppose so, and that all cometary and planetary bodies are so formed and proportioned, in all respects, that this effect is invariably produced. This may be new philosophy, or it may be new-doctrine to the philosophers —but it is very simple, nevertheless. In my opinion, the doctrine is not more simple, however, than it is sound, and here I leave it for the consideration of others. The wisdom of Deity moves in perfection, and all nature is governed by very simple laws.

Hitherto we have been contemplating the Earth, as moving exactly in the place of its orbit, which it does not do, but under an angle of inclination equal to about 23 1-2 deg. By-and-by I shall come to a thought on this subject that may seem a little wild. The Earth has now this angle of inclination, whether it always had so much, or whether any, or not. Suppose it moved, formerly, exactly in the plane of its orbit—the seasons, then, or those annual successions of heat and cold, summer and winter, seedtime and harvest, which we now enjoy, would have been unknown, and there would have been no other changes of temperature than what were occasioned by the succession of day and night. Mountains would have been piled up, under the equator, diminishing in height towards each pole, precisely according to the latitude: nor would there have been any atmosphere at the poles, capable of supporting animal life; nor would the tides have been known, if my speculations are well founded.

If there be any thing at the centre of the earth, I suppose it must probably be ice, instead of that central fire which some have imagined to be confined there;—ice formed from clear water, extending through from pole to pole. Here, again, I pause, to indulge reflection. Are not earthquakes occasioned, sometimes, by the motion of huge masses of ice in the bowels of the earth? At any rate, the line of direction in which these mighty convulsions move, seem conformable to the features of the country, and the ranges of mountains and highlands adjacent and the principal waters.

Here let us pause a little longer to examine the effects which must result from this kind of reasoning, applied, as we have seen, to the original materials of which this globe consisted, 'while yet it was without form and void, and darkness was upon the face of the deep,'—ere 'the waters' had been 'gathered together unto one place,' or 'the firmament had been formed,' and 'the dry land had appeared, to divide the waters from the waters.' The *days* of Crea-

tion, in the order of the Deity, may well be deemed *ages*, or *times*, by man. It is not my purpose to attempt a treatise on the creation, but I recommend an attentive perusal of the history of this great work, as it is recorded in the book of Genesis, of the Bible. If it can be read in the Hebrew, so much the better; and I feel fully persuaded that every person will the more readily embrace my theory, for having recently studied this volume of inspiration. I am delighted with the history of the creation in that book, and often turn to it with fresh delight and admiration. To my mind, the proof is strong that I derive from it, in confirmation of this theory of mine. But—I leave these reflections, while I survey the subsequent arrangement of the natural elements, in which I must be indulged with repetition and every informality. There were probably no stones created at the beginning. These are the products of those natural causes, which, conformably to the wisdom of the plans of the Divine mind, do govern the natural world or the world of matter. Now—if I philosophize correctly, in supposing that, were the materials of this earth once in a semi-fluid state, then the heaviest substances would first be precipitated from this mass of turbid, muddy matter; and that they, in consequence of their greater specific gravity, would be thrown towards the surface, instead of accumulating at the centre, then must we reverse, in toto, the popular philosophy of the present day, relating to this subject, in order to come at the truth. Whether or not, let us have patience to examine. Were the globe at rest; or—if it had no diurnal motion on its axis, all the materials of which it is composed, supposing them originally in a fluid or semi-fluid state, would be arranged from the centre, in the direct ratio of their density or specific gravity: but the effect of this motion, has given them an arrangement precisely the reverse of this—so that all substances are remote or distant from the centre, according to the inverse ratio of their weight. And why not? Why!—the doctrine is *new*, and must be rejected. But suppose it were *old?* It would then be more simple than the old, more philosophical, and much more easily reconciled with appearances. Are not these inferences necessarily and obviously founded on the Newtonian philosophy? Certainly—as I think,—and if so, they will become old doctrines, in good time.

I suppose that, at an early period of the 'world,' a large portion of liquid matter of the inflammable kind, was produced in the form of liquid bitumen. It is a compound, not a primitive, elementary substance, though it has become the prolific parent of many that we now consider such. This substance, being lighter than any of the earthy or metallic substances, would be precipitated at a later period—occupying a middle ground, between the lighter of the earthy substances, and the water underneath. This bitumen, I consider the base of hydrogene—and that of course it has undergone great changes. But I wave this consideration just now, and proceed to suggest that there, probably, it may still exist, in vast fields or seas of liquid bitumen, neither at the centre nor at the surface of this earth. Allied to the metallic matter, it adheres to their great masses, supplying, in time, the chief material for converting them to use. This is the substance from which the great bodies of mineral coal are

formed, and it is easy to conceive by what process. The operation of the elements, and the changes of heat and cold, having volatilized a part of this substance, convert the residue into an indurated, stony fossil, more or less purely inflammable according to its purity. There are probably no countries on this globe, but what, at some depth, are underlaid by bitumenous coal, by liquid bitumen, or perhaps both. Were I now writing a treatise on natural philosophy, I should here stop to consider the distinction between what I consider bitumenous coal, and coal formed from vegetable remains. Any ligneous substance, that can, by distillation, be made to yield an inflammable gas, is capable of being converted, by a process of nature, into a mineral coal. Probably, however, the bitumen of which I have been speaking, being very universally diffused throughout nature, may be the original stock from which every other inflammable substance has derived this characteristic. Hydrogene, I believe to be formed from this, as a base; and, however modified and disguised, in all its varied forms of combination, that all inflammability is produced from bitumen, or from bitumenous gas. Coal, according to my idea of its origin, is but of two kinds, however modified and numerous its varieties. The purest samples of bitumenous coal, differ in no respect from bitumen, only in having lost a small portion of the more volatile of its constituent parts, by which it is converted into an indurated bitumen, and rendered capable of holding a larger portion of caloric in a latent state. It is now most aptly fitted for the use of man in the arts—and by different degrees of heat, may be reconverted to a liquid bitumen, or a bitumenous gas! Old coal, therefore, differs from new, as both differ from bitumen; and that which has long lain near the surface of the earth, where it has been exposed to the action of varying temperatures, from that which has lain deeper in the ground, and less exposed to the action of these causes of change. Time, alone, is capable of decomposing it, leaving inflammable gas, or hydrogene, sulphur, and some earthy remains. Whatever, in the order of time, by the operation of natural causes, has been produced, may, in the same order, be again destroyed and reproduced. The earth thus yields its stores to the air, the air to living products, and these to the earth again: while the real number of elementary substances may be infinitely less than we imagine. I have my doubts if there be but one elementary earth. Time must determine, while theory is forever busy in building, to destroy, and rising, to fall. Stones are heavier than the earth of which they are composed;—coal, than liquid bitumen. Thus bitumenous tracts, converted to coal, rise higher from the centre of the earth, in proportion as their specific gravity is increased by induration. And by being washed of the soil, in hilly countries, the coal-seams are at length exposed to view. I believe that, as a general rule, coal is found at a less depth, on the West, than on the East, of the ranges of mountains, in all countries. It has often occurred to me that the formation of basaltic columns is erroneously attributed, exclusively, to the action of either fire or water, though they may have been produced by both these causes. May they not also, have been produced by the mere mechanical pressure of large masses of earth? It is not certain, nor indeed is

It probable, that these columns were ever formed above ground, though they now may appear so. I am disposed to assign great effects to the action of volcanic fires; and I purpose to say something about them by-and-by.

I have thought that philosophy is mistaken in supposing the existence of repulsion;—Is it not a weaker degree of attraction that we call such? Or rather, is it not occasioned by a countervailing attraction? Magnetism, and electricity, are natural results from the constitution of nature, and did not exist from the beginning. The earth is a great magnet, from the position of its axis, and the arrangement of its metallic matter. Were its poles changed to E. and W., the magnetic needle would soon lie in the same direction. We may discover, by-and-by, that our correction of the variation of the magnetic needle, is much like correcting the Sun, by the time of our time-keepers!

There is no subject presented to the mind, by a survey of philosophical science, which seems to me so full of matter for new research, as the doctrine of the formation of gases. All the solid substances, known to us, are capable of being converted into some kind of gas; and again reconverted to a solid. To me, this subject presents a world of wonders. To contemplate the endless transmutations of matter, in this way, opens a field, which, when I attempt to enter, makes me duly sensible of the comparative littleness and incompetency of that portion of mind which I enjoy. The operations of nature, all run in circles;—who can trace them! I have satisfied myself that no gas with which I am acquainted, is a simple, elementary substance. They are among the products of all-prolific nature—prolific only in transmutations and changes—for God, only, can create matter. Here, again, I am forced back to consider that single fluid—the only one that was absolutely created by the Almighty, of all that numerous host in the natural world, which we now know, or conceive we know. This fluid, of which we know a great deal, by its effects, we denominate Caloric. Probably no inhabitant of this earth, has ever yet enjoyed the sight of this fluid, in a perfectly pure state: nor do I believe we ever can, with merely human eyes and perceptions. But, this is a subject beyond my present purpose, though I love to contemplate and enjoy it. United with the mineral and metallic gases, some of the forms it assumes are familiar to most of us, though science has by no means attached a due degree of importance to the consideration of these matters. I suppose that what we denominate the electric fluid, is simply a compound of caloric with these gases. Every electrical machine, therefore, that collects this fluid, is a real manufactory, beside that it serves to collect what may be already existing in the surrounding air. The amalgam, and the heat poduced by friction, supply the materials from which it is actually produced, the quantity of which, as I suspect, is always in proportion to the heat applied to the amalgam, and the consumption of its metallic matter. Lightning, then, is an effect of electricity, an effort of this fluid to equalize the distribution; and what we call electricity, is produced by the agency of heat, as seen in evaporation, principally, and the changes occasioned

by varying temperatures. The Sun, as well as the earth, is the work of Deity in Creation; and Caloric, the only created fluid of the natural world, is the sole cause of fluidity throughout its wide, its vast domain. However much this fluid might abound, it could only be visible to such perceptions as ours, when transmitted through media capable of refraction: or, in other words, when compounded with the invisible fluids that its own action had produced. Hence, until evaporation had commenced, and the formation of an atmosphere, the whole globe would be constantly involved in utter darkness. "In the beginning God created the Heaven and the Earth. And the earth was without form and void; and *darkness* was upon the face of the *deep*. And the Spirit of God moved upon the face of the *waters:* and God said let there be *light*, and there was *light*." "The Lord God had not caused it to *rain* upon the earth, and there was not a man to till the ground. But there *went up a mist* from the earth, and watered the whole face of the ground. And the Lord God formed man, &c."—I can think of nothing to add, here, so completely do I think this scripture to my purpose; and after again commending a perusal of the Mosaic account of the Creation to all my readers, I proceed on my way.

There is a great deal of water, or of the elements that form water, in the composition of most substances with which we are acquainted. A large portion of water enters into the composition of stones, of every kind. This circumstance must have diminished, at some periods of time, the actual quantity of water on this globe, and in a very considerable degree. Not that the materials which form water have ever been diminished, but the quantity of the fluid itself, in consequence of its new combinations. Whatever has once been water, or capable of composing it, may become so again, and probably will do so, in succession, to the end of time: and that nothing thereof will be lost. The hardest rock, decomposed by the operations of all-conquering time, must give out its water of petrifaction, or of crystallization, in some form or other, in time, perhaps to be again re-composed with the same kind of materials. The reader will bear in mind that I am merely writing my thoughts, in their own order—and not attempting a treatise, or an essay.

I am inclined to a belief that some one of the order of fossils denominated salts, is a primitive, elementary substance; and that our common salt, now called a muriate of soda, is that salt! Since I have hazarded so novel and bold a conjecture, I must go a little further, to say, that, in my opinion this salt is the base alike of all the other salts, and of those substances called alkalies! For these conjectures, I expect more indulgence with posterity, than with the men of the present age. The alkalies are all compounds—are all the salts? The existence of the metals, in these combinations, will by-and-by only be cited as proofs of the correctness of these conjectures, rather than that a *new* metal is discovered! Modern Chemistry, a science most admirably adapted for extending the sphere of accurate knowledge, is reposing too much on hypothesis, already, and too little on demonstration and fact. Young as it is, it has accumulated a great mass of error, the rubbish of general and hasty theory, which time must brush away.

The saline particles from which the crystals of salt have been since produced, on being precipitated from the elementary mass of matter, would take a position according to the specific gravity of their composition. Salt water is heavier than fresh—and of course would accumulate toward the surface, leaving the fresh underneath, or toward the centre. By the operation of heat, and the influence of varying temperatures, crystals of salt would in time be formed from this water, exactly as bituminous coal is formed from bitumen, while new gases are evolved by the transmutation.

In the beginning, there was no mist of vapor, nor dew, nor rain: no clouds, or atmosphere: the earth was without form and void, and darkness covered the face of the deep. When the land arose, with the mist of vapor, Man was created, to till the ground. The dews and rains formed water-courses, of which there were none in the beginning. As the land emerged from the water, and evaporation formed vapor and an atmosphere, the changes of temperature would so rarefy and condense this vapor, alternately, as to produce, first dews, then showers of rain. These causes would begin to form descending currents and water-courses. As the mass of earth was increased in extent, the summits first formed would rise higher and higher, as already shown, till the little hillock has become a mountain, and the mountain a continent! Thus, then, the 'firmament' being extended, the little rill has become a mighty river, stretching from that summit which first saw the light, through the glen and dale, adown the mountain torrent, and across the plain to the sea! What a field is here, for what a poet might call the inspiration of his muse! Lord! how wonderful are thy works! In my meditations, I love to trace thy power, and dwell upon thy goodness! Behold!—the morning of Creation! In the vast field of matter before me, just beginning to be, and but faintly illumined by the light of the Sun, I see a little hillock peeping its head above the waters. The first offering of nature to yonder glorious luminary, is collecting in splendid, fleecy curls around this lonely head: see, the mists of vapor ascend its sides, and settle on its brow, which is fast mounting upward. I see the meeting of numerous floating islets, and watch the operations and the force of nature. A mountain rises to my view, with clouds, and storms, the lightning playing round its head. The rains descend, and swell the little brooks to torrents, while ruin threatens all before me, so black and dreadful is this mighty tempest. While yet so young, I grieve to see this wreck of nature, its form so fair and good! The thunders roll—a voice divine bids me not fear—'these are the sports, and not the wars of nature.' Calmly I wait the event, and look;—till, as I gaze, the mountains seem to rise in air; the plains to spread;—the rivers sweep their way, and reach beyond my view;—and lo! volcanoes blaze around me;—here are the Andes—there the Maragnon! Of mountains, and of rivers, these are the chief. The work is finished, and lo! a globe, a world!

Here we must pause to look about us. Though the Earth were once a soft, muddy, semi-fluid mass throughout, yet long ere the era of rivers it had ceased to be such. In its general form, it had

become flattened at its poles, and the region of the equator;—so that its profile presented the resemblance of a circle flattened on 4 sides, or that of a square, rounded at its 4 angles. These features of progressive effect were not permanent, except in part; but to trace their changes is not my present object, which is to illustrate the order and progress of nature in extending the operations of fluids on the Earth's surface. Keeping this object in view, I must be indulged with repetition, and all of my own peculiarities. The land, then, is all alluvial, for it has all been formed from the deposites of water: how, I have already shown. How its exterior features have been changed by the washing of the waters on its exterior surface, remains to be considered. The loftiest summits of the highest mountains, now buried in eternal snows, and hidden behind the clouds, were once little islands of earth, just emerging from the great deep, without stones or rocks or water-courses. In this early age, when the land was hardly yet dry, and there were no rocks in the earth, the operation of running water was great and sudden in changing the appearance of the earth's surface, as well in water-courses, as every where. But—owing to the irregularity of the surface, the waters of the ocean in receding from the rising summits, had left vast inland seas of salt water, whose barriers prevented an immediate discharge. In time, filled by the alluvion of the waters from the hills; or drained by the operation of streams that issue from them, through the passes of the barrier hills, this sea disappears, and its bottom becomes dry land! Rinsed by the washing of the rains, no saltness remains—and science may search in vain for its ancient barriers;—nor less in vain are the speculations of the philosophers, to account for the phenomena which have marked the recess of this ancient sea. And the Naturalist—but I must leave them all, and proceed, mentally pleased with their supeculations, and that mass of natural curiosities which they are collecting in heaps. Had these waters never formed an outlet, here had been still a lake, or sea of salt-water, where now are the towers and temples of numerous cities, and all the nameless varieties of active and busy life. Where, now, in the midst of yon populous city, there stand, in clusters, the temples devoted to religion and the sciences; whence issue the learned men whose labors have just now so amused my mental eye,—was once the unfathomable depth of a vast lake of fresh water. Tradition had told the fishermen, that, many ages since, this lake had been a sea of brine, and tradition, only, had been credulous enough to believe it, Had the waters of this inland sea never found an outlet, they would still have remained there, and still have remained salt, from which they have been so gradually and effectually purged, that even tradition no longer believes what they were. Inland seas, every where on this globe, which have no outlet, are salt seas still. Our American Mediterranean, or inland seas, of fresh water, from Lake Superior to Ontario, were once oceans of salt water; and but for their mighty outlet, had remained so still. Such has been the process of change! Every valley, which had its early barriers, has been a sea or lake, and in the same way has been drained of its waters and freshen-

ed, if fresh they are. If these barriers were worn away at an early period, before the stones and rocks had been formed, or had acquired their hardness, they are probably worn down to near the level of the stream, which may now find its way to the parent ocean without a cataract. Water-courses do not wear away the rocks so completely as to form an unobstructed passage, and entire, only when they have encountered them in a state of softness, compared with what they are at the present day. But, in an early age, it is easy to imagine with what rapidity a great change may have been wrought in this way. Ascending vapors, are conducted obliquely upward, by the acclivities of hills and mountains, till they gain their summits, where they rest till dissipated by the power of heat. It is this vapor which forms clouds and rain and snow—which supplies to the mountain-products that heat and moisture which they require—by which the changes and transmutations of things are wonderfully quickened, and the active processes of nature are carried on. I have said that the sides of hills are natural conductors for the ascent of vapors, formed by evaporation, and that these vapors accumulate around their summits. This is true of hills of a certain height. But—we have seen that the summits of hills and mountains have been constantly mounting higher and higher, during a great many ages, as the mass of earth is encreased by accession, and its specific gravity, by being petrified or indurated to stone. In time, many of these summits mount above the region of these mists of vapor and the gathering clouds and storms, where, after a while, they must moulder for the want of nourishment, crumble into dust, and be destroyed. They left the waters at an early period, and have carried aloft with them but feeble marks, and indistinct, of their emergence. The geologist is confounded here, as in the depth of the vale where last we saw him. While the earthy base was growing, and elevating the summit, and the operations of the elements were converting it to stone, all nature around was in full activity. Life had been implanted in the vegetable and animal subjects of organization, and nature smiled every where on the works of reproduction. The showers washed down the richness of the hills to form alluvion in the vales below, till by-and-by the scene is changed. Its summit has risen far above the region of clouds, is clothed in eternal frost—and now it is crumbling in decay! Its rocks moulder to dust, and thus restore again to nature, for active operations, that which time had taken and fashioned for itself! Thus, then, after a lapse of other ages, the 'eternal rocks' of this mountain-of-mountains, converted to dust, are by degrees restored to the vallies and the regions of vegetation; till the whole, by a change of substance, and a consequent loss of its specific gravity, subsides, by its levity, to the level of the meaner hills. Subsides by its levity! Yes. And where once was a mountain, is now a hill, or valley, composed of substances more confounding to the pride of learning and science and philosophy, than even that vale of curiosities, which had once been covered by a sea of salt, then by a lake of fresh water, and is now a vale of rich alluvion, thronged with people, and speckled with numerous cities! The wonders of that place, consisted of the works of nature in composition; here they are displayed in the ap-

pearance of decomposition. Here lie all the constituents of the oldest and hardest rocks, except their water, in strata of rock-dust, with rotten stones, irregular fragments, and innumerable stony nuclei. But, I must not dwell longer here, though I fancy myself expounding the natural history of some places which I have actually examined.

It is not unlikely, but is indeed very probable, that many of those ancient seas may have had, at the same time, several outlets, or streams issuing from them, by which they were first freshened, and then entirely drained. These streams, would, of course, deepen their beds more or less rapidly, according to their quantity, and the velocity of their currents, the nature of the ground, and other circumstances which would variously affect their operations. At one time, the principal issue may have been in one direction, as at the N., at another time at the South; and by the more rapid excavation of one of these streams, the others would all be left quite dry. I only mention this to show how easy and natural it must have been for the operations of nature, in old-time, to have so disposed her works, as to confound the evidences of their progressive order at this remoteness of time. Besides this, there is an operation of large bodies of water, by which, though almost entirely without currents, they excavate the ground and deepen their beds, in a way that seems not to be understood. This effect has been noticed by many, but the cause has not been explained. It is not my purpose to cite instances of this kind; but every body may find them; and I will venture to say they are deserving all of even a Philosopher's attention. I will even commend this subject to his notice, while he is gliding over the waters of our American Lakes. A trip to Canada, by the way of Lake Champlain, is full of opportunity for speculations on this subject, as it is indeed for many others suggested in these remarks.

Suppose now, we take a flight with a Comet, and see what this globe, on which we find ourselves, has once been. I think, that all planetary bodies were once cometary: or that all the Planets, as we call them, were once just such bodies, and exhibited just such appearances in their orbits, as these do which we now call Comets. At first, when issuing from the Sun, from the creating hand of Deity, they are such a mass of unformed matter as that I have described before, and suppossed this Earth once to have been. A Comet, therefore, contains all the elements of a future Planet, and a habitable globe. It is at first a soft mass of matter, in a semi-fluid state, thrown off from the sun, the centre of the natural world, round which it revolves in a very excentric, or elliptical orbit, revolving rapidly on its own axis, and exactly in the plane of its orbit. On this line it is forever to move, but is an orbit forever changing, and never, to the end of time, will it make two revolutions precisely in the same track. Planetary bodies, I suppose, have all thus had their origin in the Sun, from which they have been distributed throughout space, at distances determined by the impetus of that force with which they first issued from that luminary. Here is the Creator's power displayed! A Comet hath just been thrown into immeasurable space, unformed, and void, containing all the natural elements

of a Planet, and which in time, is to be furnished for the habitation of man! Lord! in great reverence I bow before thee, and crave thy permission to trace this wanderer, in my mind's eye, and the wonderful works of thy power!

Moving, at first, in a right line, or nearly such, as it recedes from the sun it is inclined to a parabolic curve, or ellipsis, by the operation of that principle of gravity by which it is forever to be retained in its orbit. The tendency of this motion will now forever be to describe a perfect circle;—but no cometary or planetary body can ever attain that form of orbit completely, until the power of its original impetus be entirely lost, though in every revolution it approximates nearer and nearer to that form. This proposition reminds me of a mathematical paradox. Though every revolution approximate this form, yet a perfect circle it can never move in, while every successive revolution is made in the same period of time as the first, describing equal areas in equal times, but in an orbit constantly varying. But, I must not be too minute. This Comet, after revolving for a great many ages around the Sun, and in every revolution extending the transverse diameter of its orbit, while the conjugate is shortened in proportion, has at length lost its tail, taken its station among the Planets, and may soon give immortal renown to the name of some discoverer of a new Planet.

(To be concluded in our next.)

For the American Magazine.

EULOGY ON PATRICK HENRY.

Pronounced at the Annual Commencement of Middlebury College, August 16, 1815.

Great talents, when directed to the attainment of good objects, are justly entitled to our admiration. If in the course of human events, there has been a time, when all the affections of the heart, and all the energies of the soul were enlisted on the side of liberty and virtue—if there has been a time when human exertions were directed to the attainment of an object perfectly just and transcendantly glorious, that time was the period of our revolution. Liberty, persecuted and banished from the eastern world, found a refuge and a home, on our hospitable shores. Americans had sworn to defend and protect her. Great must have been that exertion, and mighty the firmness which was to save her from the grave, inspire her with new life and perpetuate her reign. But great as it must have been, Americans did not shrink from the contest. With the invincible spirit of martyrs, their hearts inflamed with the love of liberty, and their souls fired with a divine enthusiasm in its defence—they boldly stood forth, the generous defenders of all that is dear to man, and of all that renders life a blessing. Against the artful intrigues of cabinets and kings, against the imperial mandates of a haughty tyrant, against the prowess of armies, familiar with scenes of blood, skilled in military science, flushed with victory

and confident of their superior strength—against the expectations of a world already vibrating between hope and despair, Americans had to contend. Long and desperate and bloody was their struggle, but in its final issue, victory was theirs and peace blessed them. The portals of Freedom's temple were opened and our heroes entered. Immortal honors crowned their heads, glory lighted their way and heaven was their goal. With veneration let us enter the temple and survey the assembled talents and patriotism and valor, which redeemed us from the bondage of a worldly oppressor, and elevated us to the enjoyment of our civil and religious privileges—which stamped upon the human character a dignity, before unknown to man, and which proclaimed to the world, with high and resistless emphasis that man was born to be free. There sits the venerable father of his country, robed in light and shining with radiant splendors of eternity. Blessed spirit! A humble mortal will not dare to speak thy eulogy—To celebrate thy peace would become the purity of saints and the tongues of angels. Warren and Montgomery—Hamilton and Greene—ye, too, gallant spirits are there; your reward is in the gratitude and applause of millions. In this grand assembly, we behold numerous others who consecrated their talents to the cause of freedom, and who religiously sacrificed their treasures, their labors and their blood on the altar of their country. Whether in arms, or in council, their talents were exerted alike in the same glorious cause, and their laurels were alike gathered in the field of glory. In our councils, we observe one, whose generous soul burned with the love of liberty and of his country—whose noblest efforts were employed in her cause, but whose name has been too little the subject of eulogy. That man is Patrick Henry. With no claims or titles of nobility, boasting no achievement of ancestors, dead and forgotten, but gifted by God, with talents which adorn, exalt and bless society, he ennobled virtue by his practice of it, and gave majesty to patriotism, by being himself a patriot.

In private life, Mr. Henry was affectionate and conciliating, generous and just; moderating the turbulence of passion, by the mildness and dignity of his counsels;—exerting his influence to promote the peace and enhance the happiness of those around him. He indignantly frowned on vice, but paid to virtue a voluntary homage. His precepts were all directed to the general good, and his example gave to them a diffusive energy and a resistless effect. In the sphere where he moved, he was a star of the first magnitude, imparting light and joy to the whole community. The great and commanding powers of his mind, joined with the goodness of his heart, gave to his example a magnet's force, and all were swift to follow, whom all loved. The indigent and the suffering were blessed by his charities—the profligate and profane were reclaimed by his counsels and advice; all classes were alike visited by his philanthropy and benefitted by his benignity.

But it was as a patriot, a statseman, and an orator, that he stood on an eminence, at once elevated and commanding; displaying the rich treasures of his mighty mind, adorning his country by his transcendent genius, and inspiring her councils by his resistless

eloquence. Above the artful intrigues and petty chicanery of the designing and avaricious demagogue—a stranger to deceit and a foe to dishonor—he marched boldly on, calmly defying the mean and viperous attacks of envy and of malice—and spurning from his presence the trembling coward and the selfish sycophant. Like "a rock in the ocean," he stood: and stood firm amidst the raging billow of party dissention and the rude blasts of private ambition.

Roused to action by the call of his suffering country, inspired with the hope of her glory—and glowing with the energies of an honorable ambition;—not that ambition, which with "overswelling tides of blood and tears dost bear the hero on to glory—while sighs of millions waft the spreading sails," but that ambition which conscience sanctions, and which heaven approves, he opposed the whole force of his talents to the lawless usurpations of despotic power—and by the thunder of his eloquence, awed into silence its deluded and degraded votaries.

With his copatriots of the revolution, he shared some of the first offices in the government, in the discharge of which, he honored his name and blest his country—that country, which he had encouraged by his eloquence—adorned by his talents and exalted by his patriotism. 'Tis not the chaplet of the warrior, which adorns our patriot's brow—his were not the deeds of the soldier, and the glories of the conqueror. It was not in the embattled field, and amidst the dread artillery of death, that he exerted his powers, and won his splendid trophies. But justly estimating the force of his talents—he wisely and successfully employed them, where duty prompted and his country called. As an *orator*, in our country, he stood preeminent. Bold in his conceptions, luminous and persuasive in his argument, and deeply interesting in his manner—his hearers were carried captive, while the benign effects of his exertions proclaimed the rectitude of the cause for which he labored. His was the eloquence of the heart. It sprung from a deep and solemn conviction of the truths which he uttered—it bore the stamp of nature—the loveliness of sincerity and the charm of genius—It burst from a heart inflamed with zeal for the promotion of an object, in itself, noble and sublime. It kindled every feeling of sympathy—it waked every emotion that is sublime—every sensibility that is heavenly.

> "Twas a spark of the Deity, bursting to light
> Through the darkness of human control,
> That flamed from the patriot, burning and bright,
> Through the eye of an heavenly soul."

What though the sculptured brass and towering marble bear not down to future ages the record of his excellence—he found a noble monument of his glory in the approbation of his conscience and the benediction of his God. To him *Christianity* imparted a consolation more lasting than the joys of earth—a hope, which reaches beyond the narrow confines of time—and rests upon the immortal God;—a crown, compared with which, the titled grandeur and imperial splendors of this world, become as the reckless visions of departed days. With him, religion was not the cold, formal, unfruitful offspring of speculation—but the warm, the active and en-

ergetic impulse of the heart. Infidelity, by the sophisms of its philosophy may gain an extended empire. Before its delusive and fantastic shrine, millions of our race may bend in slavish adoration and sacrifice their souls. But though its triumphs may be great in their extent, they must be short in their duration. With all the fleeting and perishable appendages of this world's vanity—their destruction will be consummated—for against them, the denunciations of divine vengeance are already recorded. But the religion of Jesus Christ is eternal as its author. It seeks not to satisfy and tantalize its votary with the vain hopes and short-lived extacies of a momentary existence. It points him to the skies—and leads to endless happiness and immortal life. It was this religion, which shed its mild glories upon the life, and consecrated the character of our virtuous patriot. Not the coward dread of the world's derision or the infidel's scorn—not all the terrors of persecution, could shake the foundations of his faith, or cool the ardor of his love. His mind dilating with the glorious conceptions of the divine attributes, he seemed absorbed in the effulgence of Deity, lost in the radiant beams of infinite glory. L.

To the Editor of the American Magazine.

Sir—In your paper on the Albany Lancaster-School I have observed with regret a small error. You mention that I had been frequently employed by Mr. L. in organizing Schools in various parts of Britain. The case was thus; after having learned the plan in Mr. L's large School, I was employed by him to superintend and reorganize that School, agreeably to his directions; for in consequence of his absence and the inattention of the young man who had had the charge of it, this had become necessary. With my labours there, Mr. L. was so well satisfied, that he proposed my going to Brentford to endeavour to obtain a place large enough to teach 400 children or more. This was the very citadel of opposition to Mr. L. and his system. It was the residence of Mrs. Trimmer, who had attacked him with the utmost violence; and he wished to put his enemies to silence by "well-doing." A Dr. Johnson there, had premises sufficiently large, and he was most happy to let me have them; but they needed much alteration, and the expence of fitting them up appeared very great; yet all this might have been surmounted, but at last it appeared that it was necessary to obtain the consent of a third person, who held a mortgage on the property, and this could not be obtained. Several other efforts were made in the city and vicinity of London, but the object could not be effected, and having lost in some measure Mr. L's good will, by making myself acquainted with Dr. Bell and his system, I was prevailed on by the London Hibernian Society to go to Ireland for them. This I preferred the rather because I had long before determined to go to America.

I am, Sir, most respectfully, &c.

WM. A. TWEED DALE.

H. G. Spafford.

To the Editor of the American Magazine.

SIR,

HAVING observed in the fifth number* of your meritorious and instructing Miscellany, a Question requiring a Mathematical Demonstration, and as it has not been heretofore answered, thro' the same channel, I request you will give the following a place in your next number. Yours, respectfully,

*Page 192. M. O. SHANNESSY.

Albany.

SOLUTION.

As the Sun's upper limb is required to be seen 3 hours before it comes to the horizon of Albany, a ray passing therefrom, when 45 deg. below it, touching the earth's surface and continued, its diameter produced thro' Albany, must inevitably determine the point of observation. *Demonstration.* A line imagined from the earth's centre to the point of contact, must be perpendicular to the Tangent, (Euclid's Propn. Book 3) thence forming an isosceles right angled △ of which the hypothenuse = the earth's semidiameter + the elevation of the place of observation, and its legs each = the said semidiameter: Whence the following rule is derived (per Euclid's Propositions 32, 6 and 47, Book the first.)

Subtract the earth's semidiameter from the square root of double its square, the remainder will be the required elevation; which, allowing the earth's diameter to be 7970 miles, is equal to 1650 miles 5 furlongs 5 poles 2 feet and 2.67 + inches.

P. S. The Diagram is omitted, as what has been said I presume is sufficient to answer the conditions of the question, and particularly as there might be an inconvenience in preparing a *Cut* for that purpose.

'THE GRAND CANAL.'

AMONG the little men, those who toil for no party, and who drudge on alone, unheeded by faction, there are none more friendly to the project of uniting the waters of the Hudson with those of Lake Erie, than is the Editor of the American Magazine. One of the earliest, among the advocates for that plan, and in zeal as ardent as any, he has done all that lay in his power, toward promoting the success of an undertaking so important to the interests of the American People. If he has been less ready than some to mount every *hobby*, that has been presented for public approbation under this name, he does not know that he is therefore any the less a friend to the design of a Canal. If any man will point out the means, by which he can render any further aid toward forwarding the completion of this design, he will be thankful for the information: but so long as he sees nothing more that he can do, except it be to join in the intrigues and manœuvres of party, he must be excused. There is too much of this kind of management. 'The Grand Canal,' will

never be forwarded by it. What good can it do? The Editor has freely expressed his opinions, and so he will continue to do, not only on the importance and practicability of this Canal, but on the faults that have marked the labors of some of those to whom the guardianship of the project has been committed. Cast away all political cunning, and let the real friends to this project unite, under its banners, and the people would soon be ready for directing a commencement of the labor of digging;—doing something, toward actually making the Canal. More will be said, on this subject, unless the occasion should soon cease to exist—and it is with difficulty the Editor can persuade himself not to say more at this time. Should he again resume this subject, he will do so with an intention to bestow upon it ample consideration, and to make it the subject of a fair and full exposition, demanding the attention of every citizen.

The Hudson, to Albany, is navigable for large sloops, being about 180 miles from the Atlantic. From Albany to Buffalo, at the outlet of Lake Erie, is about 300 miles. Along this course, which is that for the proposed Canal, stretches the Mohawk, for the distance of about 100 miles. Between Rome and Buffalo, the country is chequered by numerous lakes and streams, has no mountains, the soil is rich and extremely productive, and few countries on the globe present an equal extent of greater fertility, or one through which a Canal may be cut at a less expense. But what is the magnitude of the object, in making a Canal on this route? Let us look at the great Lakes, connected with Lake Erie—the extent and fertility of their shores—and enquire, where are these countries to find a market and a mart for their productions and their trade? Lake Erie, is about 250 miles in length; Detroit River, 28; Lake St. Clair, 90; St. Clair River, 28; Lake Huron, is very broad, and its circumference may be assumed at near 1000 miles; the length of St. Mary's River, 40; L. Superior, 1500; and Lake Michigan, 900 miles. These surfaces present an aggregate of more than 4000 miles; and the navigation, throughout, is only interrupted by a portage of 9 miles, between Lakes Huron and Superior. Lake Ontario, below the cataract of Niagara, is 190 miles in length, and has a medial width of 40 miles. The proposed Canal would course along its southern shore, at distances of 5 to 20 miles, and would certainly gain some portion of its trade. Here, then, is an extent of 300 miles, between the Hudson and Lake Erie, so rich and productive—so much in want of this Canal, that the inhabitants may almost afford to be at the expense of making it;—and beyond that, a country embracing a navigation more than equal to the width of the Ocean that separates America from Europe, which would find the channel of its whole trade through this Canal. Nor is this, even yet, a view of the whole ground. From Lake Michigan, a Canal of a few miles would extend the navigation to the Mississippi, either through L. Winnebago, and the Fox and Wisconsin rivers, or the Illinois. The Mississippi, flows to the Gulph of Mexico; and the Missouri opens a navigation 1300 miles westward. The time may yet come when the teas of China, and the productions of Asia and the Pacific Ocean, shall ascend the Columbia River, and be wafted

down the Missouri, for the supply of the vast regions connected with that navigation. The great Lakes of the West, have numerous rivers, spreading through all the regions that surround them: and these countries are known to abound in mineral treasures, inviting to commerce, while the soil is capable of supplying all that the industry of man can require or seek from it.

Would we inquire, then, where shall the commerce of these Lakes, this World of the West, find an outlet, a channel of communication, presenting an absolute superiority beyond all competition, we say by that very route proposed for this Canal. The people are every where of this opinion: In New-York, Pennsylvania, Ohio, Indiana, Illinois, Michigan, the N. Western Territory, and in Upper Canada, a large portion of the people are looking with anxiety to this undertaking, and would all contribute toward making the Canal, or supporting it when made. Such are the impressions of the Editor—and if we have here converted this great undertaking into a political hobby, the regret should be in proportion to the magnitude of the interest at stake, which is suffering in consequence of delay.

ED.

For the American Magazine.

From the French, of Mons. Barreau.

'Tonne! frappe! il est temps, ren-moi guerre pour guerre;
J'adore en perissant, la raison qui t'agit;
Mais clessus quel endroit tombera ton tonnere,
Qui ne soit tout convert du sang de Jesus Christ!'

Which is thus rendered by the Translator of Voltaire's Age of Louis XIV.

'Let lightnings blast, and thunder strike me dead,
Thy vengeance must a justice be esteemed;
But on what part of this devoted head
Can fall thy ire, which Christ has not redeemed!'

I offer another translation, or rather imitation.

Roll thunders! lightnings dart:—
'Tis time to give me war for war—
Pierce, conquer my rebellious heart—
I perish, and adore!

But ere thy red-hot wrath strikes home,
Or blasts me with its glare,
Let me be covered by the blood of Christ;—
I fly for shelter there.

J. S.

SOCIETY FOR THE PROMOTION OF USEFUL ARTS.

Officers of the Society for 1816.

Simeon De Witt, *President.*
John Tayler, *1st Vice President.*
Stephen Van Rensselaer, *2d Vice President.*
James Low, *Recording Secretary.*
John W. Francis, *Southern District,*
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Horatio Gates Spafford,
Jonathan Eights,
T. Romeyn Beck,
Jacob Green,
James Stevenson,
} *Counsellors.*

For the American Magazine.

Rule for the Equation of Payments.

MULTIPLY the first payment by the rate of interest, and the second by the rate of discount. Multiply the second product by the time between the payments, and divide this product by the sum of the first and second products. The quotient will give the equated time, from the first payment.

If there be more than two payments, take the equated time of the first and second, and the third payment, for a new calculation.

PEDAGOGUS.

TO CORRESPONDENTS.

Salinus, has been mislaid, or he would have appeared long since. Is it now too late? Perhaps he may have something to add. The subject is of high importance. *Philologus* is angry, and he has good cause.—His Paper was printed during the sickness of the Editor;—and P. must confess he writes in a very blind hand. Some of the most material errors will be noted in an Errata.

For omissions, in not giving insertion to the numerous favors of our Correspondents, which might demand an apology, we have only to observe that the Printer assures us he has at least Copy for six Nos. in advance. *Some*, must lie over—and we have constantly aimed, in making our selections, to be governed by strict justice, as well in relation to the favors of our Correspondents, as to the interests of our Patrons and Readers.

We would willingly publish the long Essay of *S.*, on Manufactures, on which he seems to have bestowed a good deal of labor, were it not that we have not 30 pages to spare. His opinions, on the policy of this business, though totally different from our own, do not, in the least degree, diminish our willingness to give him publicity. Free and full discussion of all important measures, is one leading object of this Magazine, and it is this which has prevailed with us to insert some Essays of a greater length than we should otherwise have preferred. *Young*, on the same subject, is a valuable Paper, and so brief that we shall endeavor to find room for his remarks, as just as they are important and concise. ED.